

1      System and Method For Multiple Channel Statistical Re-Multiplexing

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3      Abstract of the Disclosure

4      A system and method for multiple channel statistical re-multiplexing preferably  
5      comprises a plurality of encoders each coupled to a respective channel and producing a  
6      compressed channel, a statistical re-multiplexer and a transport medium. The statistical re-  
7      multiplexer preferably has a plurality of inputs and an output for combining the input  
8      compressed channels into a single output bit stream. The statistical multiplexer further  
9      comprises a plurality of de-multiplexers and a scheduler & multiplexer having a plurality of  
10     buffers, a scheduling table and a controller. Each of the buffers receives and stores compressed  
11     data from a respective encoder for a respective channel. The output of each buffer is coupled to a  
12     respective de-multiplexer that re-encodes the compressed channel in response to control signals  
13     from the scheduler & multiplexer. The scheduler & multiplexer receive the re-multiplexed  
14     streams from the re-multiplexers, and combine them into a single stream that matches the  
15     bandwidth of the physical transport medium. The present invention also includes a method for  
16     performing statistical re-multiplexing including the steps of: performing bit stream analysis;  
17     determining a sending rate for each channel; determining whether the combined bandwidth  
18     requirement of all the channels exceeds the channel capacity; performing rate adjustment by re-  
19     multiplexing the channels if the combined bandwidth requirement of all the channels exceeds the  
20     channel capacity; scheduling the channels for transmission, combining the channels and  
21     transmitting the combined channels over the transport medium.